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(54) Title: REMOVAL OF SULPHUR COMPOUNDS FROM HYDROCARBON STREAMS USING ADSORBENTS AND REGENERATION OF THE LOADED ADSORBENTS

(57) **Abstract:** The invention concerns a process for the removal of sulphur compounds from a hydrocarbon stream, especially a gaseous hydrocarbon gas stream, comprising said sulphur compounds, which process comprises contacting said gas stream with an adsorbent comprising a zeolite having a pore diameter of at least 5 Å to adsorb the sulphur compounds thereon, the adsorption process followed by a regeneration process of used, loaded adsorbent by contacting the said loaded adsorbent with a regeneration gas stream having a relative water humidity less than 100 %, especially less than 80 %. Suitably the regeneration is followed by a dry regeneration treatment. The invention further relates to a process for the regeneration of adsorbent comprising a zeolite having a pore diameter of at least 5 Å loaded with sulphur compounds by contacting the adsorbent with a regeneration gas stream having a relative water humidity less than 100 %, especially less than 80 %. Suitably the regeneration is followed by a dry regeneration treatment.